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Readers: we welcome your programs, articles and tips - see the panel in this issue for derails

[^0]
## You could be on our pages

We welcome programs, articles and tips from our readers. If you feel that your work meets our standards, please submit it to us for consideration for publication.

- Programs must always be sent on cassette. Listings are helpful, but not necessary. Check carefully that they are bug-free. Inciude details of what your program does, how it works, variables you have used and hints on conversion.
- Articies on using home computers should be no longer than 2,000 words. Don't worry about your writing abillty - just try to keep to the style in HCW. Articles most likely to be pubilshed will heip our readers make better use of their micros by giving useful ideas, possibly with programming examples. We will convert any sketched illustrations into finished artwork. - Tips are short articies, and brief programming routines. Your hints can ald other computer users.
All submissions will be acknowiedged and the copyright in such works which will pass to Argus Speciallst Pubilcations Ltd will be pald for at competitive rates.
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# Giveaway 

From front page four Microdrive cartridges as an Expansion System, for £99.95. On the cartridges: Tasword II for word processing, Masterfile, and Quicksilva's 3D Ant Attack and Games Designer, plus demonstrations and utilities.

- The Sinclair QL goes on retail sale from September 1 and all mail order will end then. The company's pocket TV will be in the shops from midSeptember at $£ 99.95$.

Although production had been increased, Sinclair managing director Nigel Searle warned that demand for the QL and TV would probably exceed supply.

Two new subcontractors had been appointed to make Spectrums which, he said, would double production to more than 2000,000 a month by the end of the year.

Sinclair Research, Stanhope Rd, Camberley, Surrey GUIS 3PS

## Software

From fronr page

estimate is that the retailer would have to sell 55.60 products from it to break even.

An expansion to the machine uses colour graphics to atrract attention and offer demonstrations.

- A similar iden is used by a system called Romox, but this only takes electrically reprogrammable cartridges.

Program Express, 23 Dalmeny St, Edinburgh EH6 8PG

## US prizewinner

Precision's Superbase 64, the programmable database for the CBM 64, recently won the top Showcase Award in its category at the Consumer Electronics Show in Chicago, Illinois.

Superbase 64 has been on the US market for seven months and Precision claims its sales are running in excess of 3,000 units a month.

Superbase 64 is a database management and information retrieyal system which uses B+ tree indexes. It offers menudriven operation, direct commands to the database or use of a user programmable interface.
Precision, 6 Park Terrace, Worcester Park, Surrey KT4 $7 J Z$

## Prizes all round

This is the solution to our Silversoft wordsquare. Horizontal: Exterminator, Slippery Sid, Alien Dropout, Zorbiter, Sam Spade. Diagonal: Muncher. Verlical: Asteroids, Robot Riot, Freez Bees.

These are our 84 winners who will each receive software to the value of $\mathrm{\Sigma} 12$ from Silversoft: J. Alba, London SWI; E R Robinson, Norfolk; Gregory Smith, Lincs; Ian Powell, Norfolk; S Phillimore, W Yorks; T J Ferrett, Surrey; N F Owen, Gt Missenden; Mr S Summerscale, Staincliffe; Mr $P$ Taylor, Northfield; Andrew Beard, Cannock; P I Willcox, Cardiff; Mrs T M Britton, Llantwit Major; Fiona Sturrock, Edinburgh; Derek Ward, Nottingham; Frank Winand, Brentwood; Kevin Grieves, Hitchin; B Cairnctoss, Tyne \& Wear; $\mathbf{R}$ D Taylor, Birmingham; Carlos Abrahams, Derbyshire; Mr E Richmond, Seiby; Glenn Parry, Cardiff; $\$$ Cook. Bradford; Tim Prince, Cumbria; A M Spayes, Abingdon; T J Slater, Chessington; Stephen Anderson, Dunbartonshire; David Gerrish, Basildon; Mark Pepperrell, Feltham; Gregory Wisken, Hockley: G Collins, Redcar: A B Coope, Notts; Toby Robinson, London W4; Anthony White, East Ham; Ross McDonald, Uttoxeter; Jonathan Cooper, Melton Mowbray; Mrs J Smith, Birmingham; Peter Teare, Newcastle upon Tyne; William J Fox, Matlock; Jennifer E Anderson, Ayrshire; Peter Atkins, W Sussex: Joseph Harper, Erskine; Simon Thompson, Abingdon; Svend Falck, Shape, BFPO 26; JR Allison, Suffolk; David Walker, Hednesford; C Beveridge, Dumfriesshire; Brenvil Brown, Birmingham; David Black, Glasgow; Colette Campbell, Dunleer Co Louth; Mark A G Kent, Lincs; Brian Buckley, Dungannon; N Lucas, Edinburgh; Alan Taylor, Merseyside; Mr G E Morris, Portsmouth; Mr C Hale, Newport; J A Drennan, Ayrshire; P Wardell, Colne; Andrew Fox, N Yorks; Mr R A Abramson, Suffolk; Simon Healher, E Grinstead; Andrew D Gardner, W Sussex; T V Jones, Worcs; Michael Slater, Lancshire; Stephen Cartwright, W Midlands; Mr D Kinsella, Greater Manchester: Christopher White, Worcs; S G Mitchell, Basingstoke; Robert Amey, Norfolk; Terry Newman, Norwich; Mr P W E Camp, Cowley; Andrew Cross, Bristol; Michael Bond, Manchester;

Christopher Hall, N Ireland; Peter Gent, London SE9; Richard Kunzer, Durham; Jason Leitch, Strathelyde; J Newman, Ryde; Adrian Davis, Dublin

Upendra Marandhar, London W1; Mr Nigel Mortimer. W Yorks; Michael D Pugh, Lancs; W T Abram, Cheshire; Marcus Prescott, Burton-on-Trent; Mark Pettifer, Wantage, Oxon.

## Round of applause

The answers to our Romik wordsquare were: horizontal: Loch Ness Monster, Zorgons Kingdom, Fools Gold, Atom Smasher, Multisound Synthesizer, Vertical: Shark Attack. Cyclops, Birds of Prey, Pottit, Caterpillar, Alien Break in. Dimgonal: Zappy Zooks, Silicon Romik Cube, Floyds Bank, Quadrant, Animal Magic, Colour Clash, Forth, Sub.
Dicks Diamonds, Romik's best selling game, was on the second line but was missed out from the list of titles. Well over half the winners discovered Dickys Diamonds. Well done.

These are the 116 winners of Romik Software: A Tulet, Perworth; G Davis, D O'Callaghan, S Hulme, Southampion; J McWilliam, Runcorn; J Roche, Poole; J Brennan, Waterford; W Asghar, R Banks, H Bray, G Chis, P Cross, E Desequ, G Lam, K Moghadam, A Samworth, P Scoth, G Theodorou, G Tong, London; R Foster, Doncastr, K Frout, Luton; P Moloncy, Dublin: A Brein, P'Serbern, Haropate; A Turner-Howe, Basingstoke; A Cartwrigh, Hull; S Esterbrooke, Roshester; I Newob, Chtpstow: K Ferguson, R Mahoney, Blackpool: M Perkins. Mahoney, Blackpoot; M, Perkins, W Redd, Hoddesdon; A Denby, Alcesier; F Reed, Hoddesdon; A Denby, Alcester: P Faurbairn, Stockporti W Bolt,
Plymouth; $\mathbb{R}$ Tester, Hurstpierpoint; A
 Gospori; C Garbuth Harlepool: M Hunt, Milion Keynes; P Shepherd, R Sisson, Nottingham; N Clark, Bracknell; SClegs, Colne; N Collier, A Goode, D Otren, $\mathbf{P}$ Taylor, A Waller, Birminthum; C Gee, Choriey; O Hord, Welwyn; L. Haley, $S$ Hulme, K Tonge. Manchester: C Catchmole, Carnforth; D Allen, Warley; D Porter, Rochford; M Allen, Warley; D Porter, Rochford; M Pitt, S Bambridge, Norwich; C Cawley, Jarrow; A Kempster, Heywood; A Blair, PFPO 42: R Gardiner, A Shirley, Leicester; G Beavis, Derby; D Parish, West Wickham; I Woffenden, St Albans; A Cairns, Surbiton; R Kinghan, Reading: D Hughes, Bury; A Gould, Slough; R Waugh, North Shields; M Booker, Chesterfield; K Bardon, York; M Cordweil, Chelmsford; D Houghton, Mitcham; M Etienne, Belgium: R Edwards, P Robins, St Helens; M Mills. Cifton; P Pointon, Walsall; P Golding. Cutbon; P Ponton, whatsall; P Golding, Clothier, New Milton; A Jones, Coventry; G Holmes, Brighton; D Clark, Peterborough; N Hurss, Lewes; A Barrett, Meagoed: R Henthorn, Nemport: A Johnson, Norlhampton; R Lacchin. I Let, Gloucester, R Poston. Horshams P Lee, Cheltenham; C Sevenoalk, Raynes Park; B Hacket, Blackbumi L Isbister, Biddileswade; I Powell. Liverpooli; $\mathbb{R}$ Johnson, I Knapp. Stevenages D Aucott, Wigston Magrat; G Johnsion, Bolton; A Acton, Stafford; C

Baker, Bridgwater; $\mathbf{R}$ Johnson, Portsmouth; J Church, Wallham Abbey; H Stephens, Maldon; M Whitnker, Doncester; M Crossan, Stabane; M Cass, Aylesbury.

## Sinciair winners

Here's the solution to our Sinclair Research wordsquare. Horizontal: Cyrus-is-chess, Planet of Death, Inca Curse, Backgammon, Ship of Doom, Maths, Music, Vu-Calc, Flight Simulation, Sabotage, Planetoids, Embassy Assault. Vertical: Chess, The Hobbit, Flippit, City Patrol, Spelling.

First prizewinner, Alex Patterson, of Berwickshire won £100 of Sinclair software. Second prize of $£ 50$ of Sinclair software went to Mr D Smith, of Slough.

These are our 34 winnes of $£ 25$ of Sinclair software: Mr M Cooper, Letchworth; Mrs N Manji, Chelmsford; Master J R Wilson, Notts; Matthew Roach, Exeter; Mr D J March, N Yorks; David Richardson, Leeds; Mr K W Carr, Rhyl; Miss 1 J Moorshead; C Thompson, Notts; Mr A Butcher, Birmingham; Lan Lester, Cheshire; Mrs B Prowse, London NWS; Ian Caldwell, Cleveland; D I Pascoe, Gloucester; Mr C E Stones, Bracebridge; Michacl Jordan, London N21; Matthew Carter, Cowcliffe; Andrew Howe, Wilsi Margaret Nobbs, Coatbridge; M J Trumper, Harrow; Mr D E Nicholls, London WCI; Jason Crawley, Basildon; Mr C F Turner, Scunthorpe; Mark Hamans, L/Spa; B Morris, Rochdale; Gary Moore, Cheshire; Mr I Field, Lancs; John Schofield, Blackburn; Graham Rowley, Worksop; Mr 1 Joyce, Loneon E17: I Baldwin, Lancs; Koon Loong Chan, Oxon; D G Houghton, Surrey; Mark Pepperrell, Middx.

## cosh new recruit

Bubble Bus is the latest company to join GOSH (Guild of Software Houses). Mark Meakings, director, said: "Piracy is beginning to destroy our industry and GOSH gives us the opportunity to fight it with other software houses."

He continued: "Our industry is currently going through a shake out, and it will go on to mature and prosper. If any of us are to survive we must stop the pirates so we can ensure adequate investment in new products."

# spectrum sprites 48K spectrum $\varepsilon 7.95$ 

1SP Markeling，15a Castons Yard，Bastngstoke，Hants

Shades of the music induarryl Now software houses are putting out singles of hit tracks from their published programs．This is the Sprite Designer／Operating system which formed part of ISP＇s SCOPE－II．There＇s a $16 \times 16$ pixel grid for designing sprites，a facility to allocate them as sprites 0 to 7 ，and a display mode，showing actwal size and referente number．A SAVE faclity is offered and NEW clears the design program． leaving the optrating system above RAMTOP

Divorce from SCOPE－II creates problems，SAVE only
saves the sprites，not the operating aystem（in SCOPE－II， this was duplicated in the main program so it didn＇t matter）． Herc，you must always have the Desigater program prevent，or find the memory position of the operating system，＂Code＇＂ SAVE it and organise its addution to your program，if you have lite experise
If，after running your sprites， you wish to alter them，at present you＇ve got to start from scratch． A lintle re－prograstming will solve these problems．But the point is，ISP should have done it，not the custotrer．Or are programs now soming as DIY Wts？

D．C．
insaructions
$60 \%$
ease of use
$50 \%$
display $70 \%$
＊alse for money $50 \%$

## Drum Kit

## 32K BRE E9．95

Quicksilva， 13 Paimerston Rd Southampion，Hants SOI ILL．

Having had no experience of music or shythm symtherisers before l＇ve been unable to make any comparisons，but I have been able to make a rew personal comments about this one．

Dram－Kit is in fact fully programmable thythm synthes－ iser with four changeathe voices， the snare dirum，bass drum．the eiectro beat and sicks．The progrant comes with a 17 －page manual which is comprehensive but unciear in places．If you follow the examples closely you should quite easily understand what is happening．If doesn＇t take long to grasp the basics，and after about half an hour yoa＇re constructing quate impressive rhythms，using the simple cursor
conurolled input．
You define the tength of each bar and the number ai bars in the thythm then the display is shown in chunks of 16 beats．Pressing the space bar will display the next page and the next 16 beals，All rhythms and voices can be saved．

My only criticism bs that the keybuard is litte slow and sometimes frustrating．Besides this the resules are often shtislying and easily achieved． A welcome change to mreade games．

M．B．
instructions $\quad 85 \%$
case of use $\quad 85 \%$
display
$100 \%$
value for money $\quad 85 \%$

## 余

## Cu＊Bert T1－99／4A E6

Siainiess Software， 10 Alstone Rd，Stockporl，Cleshire

Having reviewed the Exiended BASIC version of this gume，Q Bono，I was pleated to wee this adaplation for the unexpanded TI．

The screen displays a pyramid of cubes．You guide a man along them，diagonaily only，and press the space bar to change the cube colour．The object is to complete the screen by changing all cubes to the specified colour．
Continually bouncing down the pyramid，however，is a white ball．A collision with this loses a ife．There＇s also a black ball capabte of transforming itself inlo various creatures that may move in any direction and change back the colour of the cube it occupies．This poses miore of a threat to Cu－Bert as its moves are unpredictable a times．
Athough the program worked without interruption for several runs，it subsequently crashed wilh Had Value－juss as suecess was in sight，wouldn＇t you know it！
Overail，I found Cu＊Rest to be just as much fun at Q Bono，but was surprised thint the keyb wete not the same．They werea＇t as comfortable to use，I would have prelerred an option to se－deline thern．

## instructions

playability
graphics
value for maney

## Breastpoint TI－99／4A $£ 5$

Stainless， 10 Alstone Rd ． Stockport，Cheshire．
Dare you logd this program in your TI？il may never be the same again after an encouruce with the dreaded＂byte bug＂． A circuit board is displayed． Sudidenly one of its components fails．Your caak is to guide your to be abandoned because the man between the working failed component could not be components to find in reached，
seplacements，then install it it place of the feulty one．But we instructions all know that where computers playability are involved，ints not that easy．graphics
For ostart the byit bug is out value for thones： to Ret your．gnd the ti hannily fake a live if yewis asequy Thien there＇s the splaties zaps．These appear unexpectedly and crunch： routnd the circuitry．Worsy of all are the static zaps．Unless the $Q$

## Take your pick

> Sift through this varied assortment of programs to find one which fits your needs．We＇ve got a designer， drum kit and cube games

## Screen machine 48K Spectrum 88.95

## ISP Marketise，15a Castons

 Yard，Basingstoke，HantsDon＇t confuse this with Print＇N＇Plotter＇s program of the same bitle．With so many tasy screen design competitors，ISP has decided to be＇different＇， abasdonint the moving cussor ine drawing favoured by others． Being＇different＇spems to come down to being the same as BASIC．
There＇s little difference between＂PRINT AT 10,10 ＂ and（ 10,10$)^{40}$ or＂PLOT $128,88^{*}$ and＂＠（128，98）＂except the extre effort required io leafa the ＇new＇language．
ISP chaims Screen Machine is ＇suitable for five－year－olds＇．Can they read this manual？
There＇s some non－BASIC extras，like changing overall ink or paper without CLS，off－screen circles and miHed circles（a） geometrie pattern filling which would be useless for，say，a face）． Are refused to work，giving ＇Number out of Range＇report． Atromatic adging can be done by any character or graphic．
You can rotate anything pristed and entarge letters to fight times their normal gixe os well as iill rectangles（expland． tion here omits the＋bigns）．
There are 95 exura graphics． with a copyright notice which renders them useless．Many manual examples don＇t work，

There are easies designers on the matket，with mare faclities． D．C．
instructions $60 \%$
ease of use
ease of $u$
display
value for moncy
50\％



## Compiled with the assistance of Britain's leading software distributors, Including: PInnacle, SDL, PCE, Websters, PCS and Software Centre.

| 4 Match Point | Sinclatr (2) |
| :---: | :---: |
| 2 Stop the Uxprost | Sinclair (\$) |
| 3 War of the Worids | Cllit $[-1$ |
| 4worldelp | Artic 1+1 |
| STornado Low Livel | Vorten (-) |
| 8Fuli Throttie | MIcremega (-) |
| 7 \%tar Treditr | Bug-byte (t) |
| - Automania | Wliropen ( -1 |
| SFactory Brenk Out | Peppoysoft (-1 |
| 107ruhman | New Ceneration (0) |

COMAODORES 6

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| 3 5oulim | 4-3xtertronic $6-1$ |
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DRAGOM 52

7 Hunchbuek 2toght BHungry Horsod 5 krieqsplet scuthbert in spoce 7 Dungeon Fold Astrember
scuthbert in the Jungle
T0 Devil Agseult

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thicrodeal ( -1 Mltrodeal (-|

Compiled by W. H. Smith and Websters. Figures in brackets are last week's positions.


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## It loads Spectrums four times faster than an ordinary cassette player, uses standard cassette software. and has improved loading reliability.

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expansion slot so that you can still use other peripherals at the same time.
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## CHALLENGE RESEARCH <br> A DIVISIONOFA.E. HEADEN LTD.

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## CHARTACTION

QUICKSILVA TOP 20 JUNE 1984

NAME
1 Trashman*
2 Fred
3 Ant Atlack
4 Boogho $=48 \mathrm{~K}$ Spec -
Boogaboo -CBM 64 -
5 The Snowman - 48 K Spec -
6 Mined-Out - Electron-
7 Gatecrasher* $=48 \mathrm{~K} \mathrm{Spec}$ -
8 Sting 64 - CBM 64 -
9 Bugaboo - 48 Spec -
10 Dragonsbane $=48 \mathrm{~K}$ Spec -
11 Escape" -CBM64-
12 Aquaplane -CBM64 -
13 Gatecrasher" - BBC 'B' -
14 Gatecrasher* - Electron - $£ 6.95$
15 Vetnor's lair" - Oric/Atmos - $£ 6.95$
16 Mined Out - Oric/Atmos - 56.95
17 Ulltisynth -CBM 64- $£ 14.95$
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## COMPETITION

Intrigue your friends with an Intrigue T-shurt.

We've got 75 to give away to each of ous prizewinnets - and there's £40-wosth of great Intngue patnes as well in the firg praze.
Intrigue Software, run by fother and son team Dennis end Marton Webb, Launched in November end now has a range of graphic arcade adventures for the TI 99/4A
The theme of suf spot the difference cartoon it taken from [ntrague's kiesa reteave, Atlants.

Set undersen, It fratures liomel, who to the war of other Intrigue games. it costs 46.95 and runs on the slandard Tl-s9/4A.

Anather TI tule, Snous of Spout, 15 due oul soon

Add, now Intrigue has a team of programmert, the firm ts branching out into Commodore 64 software. The first tite, under wraps at present, is m new game which will be on sale in time for Chnstmis.
Our first prizewinner will fecesve from thingue a T-shisi bearing the firm's distinctive logo, plus one cach of all Intrigue's games.
They are: Marth, Adventurematria and Beneath the Stars, all 15 95: Lionel and the Ladders and Lionti and the Castle, both 4795 ; and Atlantis, f 695 . Lionel and the Liddess and Loronel and the Castle need the Tl's Extended BASIC module. All the others run on the stendard TI.
The 74 runners-up will recejve Intrigue T-shists.

The prizes will errive from Intsigue withn 28 days of the terylts appearing in Home Compuing Weekly,

## How to enter

Study the two carmons - there are a number of differences betwaten


You may enter as many times as you wish, but eachentry musl be oas an official coupon - not a copy and sealed in a separate envelope

Imporiagt: please follow carefully the guideltnes on entering ancomplete coupons and entrits in envelopes with no numbers on the back cannot be contsidered. If you are , whner, the coupon will be used as a label to send your praze so clear writing is escential

## The rules

Entres will not be accepled from employeen of Argus Spectulst Publications, Inrigue Soliware and Alaborter Passmore od Sons. This restriction also apples to employees' famist ated apems of the compantits.
The How id Enter mection fostra part of the rules

> We're offering both software and T-shirts in this week's free-to-enter competition.

them. Circle the differencts an carton 6 and seal the cartoon and coupon in an envelope. Wrate clearly the number of differences you found on the back of the envelope.
Post your entry is Intrigue Software Competation. Home Computing Weekly, No. 1, Colden Square, London W1R JAB Entries close at fitsi post on Friday August 24, 1984


## Englishsikilis II

 32K BBC E11．95Griffin，Ealing Rd，Alperton， Wembley，Middx HAO 1Hy

If find to very difficult indeed to Find anythang construcrive to say about this packige．It strikes me that if schools，for thas bs who thes shamed at choose to ise A package suck as this then we will rever get computers accepted aerass the guresutum．
The stated on is to enizuarage 10．it 15 －year ords it the akilis teeded for Enghsin 0 －Level and CSE classes，What this package obrprixes is fort frogralis dell ry with the for ow．0． motaphort，opposties，group cermin \｛collective numes，for thase who teft school roms time ngol
and odd ward ous
Esil follows an ident car format of a series of multop a Lhoke questions presemied ont aftes anothes with nstant feed－ toesk on the answer seicuted In other worts，an an mated rewt book and not a particularis arge or cheap one at thai I wowdret fecommend antore to buy package such as thas for I＇m certan that even those thang whin are atoded unad ail be fireco onlo a lak sheets of ath paget whit the andmers otit the bak

## Tnverticicity

ease of use
griph is
whluc for theancy
5

## Wordskill 32K BBC E12．25

## Chable50ft， 37 Wilowsea Rd，

 Whicestet W艇 TQPThus package，which is only avalsabie on disc，to ghs be best destribed as a suger hargaman for not only do you hate io guess the fetrers in a word but in all the ords which mple up ．phrase！ it is caumed thal his is a ＂raluable anguage detelopment sool＇but \＆can＇l siy，hat J real．y see us porential in thre sht The packuge is very west pal together and the instructions，boik on cireen and th the book suppled， ate easy 10 follow
you have pleaty of options to chonse from two actudng a ＂random＇uption with the posublaty of produtary sume

Wety strange and funny plurases and over fous milron of them． That doestit help the base problem though st it＂valuable Is if a leaching tool＇Does in encourare＂inmilgenatwe think－ ．ng＂and＂cortest spenalg＇
1 tas＇q say I＇m convinced and， thale I agee wath the publishers that thase chaldren who are ＂bored＂by readng rext books witl en，oy it，it doesn＇ו hetp 10 avercome thes boredom and may in fact remforce it，This is packnge 10 see hefone purchatise．I recl．
anstructions $\quad 850 \%$
cabe of tise
graphus
value for moncy
$80 \% / 4$
N A

## 人－人

## Maths 1 Memorech MTX E10

Combental，stanton Lu，Whter： Quon

Mathat is tie trest in a tow pant
 Hath d，It w．＂lake the athelemta（x｜S）t evel standurd If it ptive tar tured tor matudt at needs＂The prograti tometate seven aectonnt ench sonsists of Jtaplay of lest end titnple graphices，and e set of frultople choles atuestians，The sections wre entuled Fractogn，Percen， apen，Decimalo，Sets，Vetin Diagrims．Sets of Numbers and Number limen．

You can step belween pugex by prashang ingile keys，The hey eccosinved al any moind appear al setect be ftem Att Irder＇its itty alfows you to search for mpecific word，and kwo partes of Help Uֻlutesty expla a shenticatice of the hes whacacten at the tette try of eath cheretar
Grapl．．s are diarapne nting IT．Twn Ifwiks an rialed desplay thastrate the division of a bloc Inte three and the operation of cturgury id witereat Ihere an ethupty nd ntiteregt itere ar diso a few

> Tuc ealite contents of Maths would fit comforrably late \＄0－puge booklet，which would be cotimederabiy mort liseful，athd doubt anyone would dare charkt IO for It．As it stands，Mahs I I hothing more than an attempl if rake advattuge of the guttobtits of parcats．
dinstruct ons
etise of use
graphics
vacus for money

# Your micro ds atedcher 

## Our educational software experts report back on programs for the BBC，Electron and Memotech

## Storyline EBC E 7.95

Dace Softwre， 59 Makenme Mose．cy，Burmingham Bil

This nragrams seracils what ut tays a tors wring program atmed at＇chilaten whe are not normally interested in wrung stories＇it is cramed to he p ＂mprove your chald a teadiog and ereat ve wril ng skilts＂bat 1 bave my doubts about thus
If wnt that the program doesntt work as planned or that it＋s teaching anvihang untoward in a wrong manner $\mid$ samplt cannot see that Il will do ans good at a．l

The basic farrent is that you are offered various words，one ar I Time，from whict to choost the

## aext one for voiar story the

 wurds ah fi aredefines tenatnce structure find can bs semance stracture and can tiscombincd into peasanabae Englsh but 18 is very hard indeed to make a storv sensibe I know chudren liase sily stories but vous need a shit far beyond 1 hat wh wh the progratn is decigred for to even atrompi a sensible

Thes is ant of those programs where mere time and thought coud have improved enafters grea ir Ia parficuar vols need 10 be otiered a much wider chouce of words
thstructions
ease of $u$ ex
braphos
sauc for money

## Science 1

 Eiectron E6．25finardi，Sutte Gi Roytraft Itsen \＄Linion Ru，Barking，Esser
firat J must soy what reatomable price policy thit combany hus．Far less than C ， Genarule and very well wriller Dringramas and I do wish more pormpaties wald adope \＆sum al phe stituture so what are the pr grams involved
The first is chated Balasce and nvolves calculatimp the mover ment of a we glt ond its ba anc． fing momtienal Lalortunately the exariples are very simple but the 3 uphats are very good
These fo ows（wis Melet
proz＇ams，one in cotour and one
In h．gh resolution，for you be
chocuse frame
Whist the programs work well enough and the magnify facilty is exce lent，I can＇t reasly see the point to using a $£ 400$ compuret for such a simple rask．Also there is no demand to use the correct unuts which is a prty
Therm is a stan as program invoiving the reading of thermometers of three typer and has a magn fy factily too．This is al more usc I feet

## F nally light involves the

 bredicion of refraction of fefiection palhs and is Graphical y excelient An told the package could heip those prepars． Ing rot O－Level or CSE

## BIO VALUE

The success story of Acom Computers the BBC Micro and Electron is th rored by supp ers who hove produced more and more hardwore, soltware supp ies and sevices And they I all be at the exh biton disk dr ves, plotters printers, montors joysticks robots, books and magaz nes alikinds of software everything for the Acorn owner

And of course Acom wil be there nforce with al the rlatest developments and software
There Ibe special offers, compet hons, odvice centres and speciol events as we I
And al th s for only $£ 300$ at the door under shxteens $£ 200$ (Use the coupon to beat the queues and sove $£ 100$ )

## BIC VENDE

Olympio 2 is the brand new exhibit on centre next to the old O ympia is got everything. wide gangways. lots of space to sit down and rest, plenty of cotering oreos

Gett ng there is easy too. $1^{\text {ts }}$ got ts own tube station, Dus routes 9.27 .2833 .49 .73 and 91 go right poss the door. and there's cor porking too!

## BIESUPPORT

Remember this is the Official Acom User Show is the most informat ve prestigious and niflent a user show in the country Whether you re a busmessman', serious wser or games enthusiast there's someth ng for you

For deta Is of exnibit on stands and advance ticket sales contact the organisers
Computer Marketplace (Exhibit ons) Ltd A Rushworth Doles Growp Company. 20 Orange Street. London. WC2H 7ED Tel 01-9301612

## BJAT THE QUEUEI SAVE MONEYI ORDER YOUR TICKI IN ADYANGE.

Buy yourticket now and save queing There wil be special entrances for advance ticxet holders.


## tters Letters Letters Letters Lb ers Letters Letters Letters Leti

## poun gages <br> cont.

In reps wor T Goodun's Icter (HCW 6.8) t 100 had the same problems iHC $W$ 53)

1 duly sent off the nitle paye to Pan Booss as therr spokesweman stated and recelved another copy of the book which suppossedly had been amended Like the first book this was a disaster the programs stal don't work.

The redsun why $R T$
Gondwin annol get reversed characiers on his VIC 20 is betaluse lises are onls sused on a (ommodore 64 Seseral of the programs have bits and pecees whos
P. R. Tuy work on a

## Evan hioro : <br> on Pan-an

Mr R. T. Goodwin's leter (HCW 68) has saved my samity 1 a so have been having problems putung in lisungs from Pan's Sexty programs for the vic 20 il was bek nting to wonder what I had done to have got so many appatenloy good gumes into such a mees I istlend to wrile to Pan and il woud be the if 1 got as pesiftite respenke but il may orly be dreamma
By the wall, don't dame the wrilers ion readily I you have seen a cupy of Micro Wats for the (cmmodore fod you'll know what a smashong book at is The wriles Humphety Walwey is responethle far that How aboul him saving me time by rewriling the smaller programs for the exparided vic $20^{7}$
Please keep on doing histings for the पार $20^{\circ}$ Theres sill a lot of us left out berc, you know Harrow. Middx.

## Whare are

you, Alan:
Please can any reader tell the where and how I can gel the Atarsoft games advertised monthlies? I've sent three letters to Asari, two to London and one to the LSA but have bad no reply (perhaps they were too busy working out how much cash they lost last year)

Does anyone have any

Aratisolt games at alt? If so, perhaps they could tecommend some for the Spectrunk, Tj99 4A or IBM PC (ho ho)
If anyone is thuting of sending oll to Alant fins delials I wolld aduse lberm not to bother ats il wousd be a waste of your thme and money, frem mi experien Mike (urits, Weymunth

## Stuck on 1 Mad Marithe

Help' I am a married woman with two chaldren and we hate 3 48h Spectrum Can anvone piease tell me hou to get oul of the room with the wath and the plowre in Mad Mafihas I be Iried everything.
also need hetp in stanic Mret She door 15 at the tor and after colletumg all the thems: go up to the top Itedge and ump for the door but roth ng happens
; would be prateful someone could help me.


## Look In tho <br> coves =

In reply to \$ Ward's Ieter (HC W 69) aboul Prate Cove, I cant herp him Unce you have got to the sland, check the cate at the lop of the hall and exp.o caves al the bottom
It would also be a good adea to sheck the rug and the alte You theght also go for a suim but be warned yolire mot a very bood suimmer
I would also like 10 kruw if ans reader has a list of POAE for the \$18 20 or a prograth to list them.
. Brecken, Whitley Bay

## + cher $x+6$

 The bug in the Oric program Atrack of the Marshmallows (HCH 6y) is exiremely eas? to find - all

## CHRS (3)

The graphics were very nice but $[$ thought the sound effects were dull I'm sure many Once owners find the zap, shoot sounds are overused in many programs, so here are a few changes for the better:

2180 SOUND1, $\mathrm{N}^{*} 37, \mathrm{~N} 12$ :

LNTII N
SOUND 1.0 .1
$3000 \mathrm{~S} 5+100$ SOUAND 10130 PLAY 7.0.1.2000 MUSIC $1,2,1,0$ MUSEC $2,2,4,0$ AL SIC $1,2,80$ e012 PI AY 7 0.1.200\%: WI SIK I, I, I O WL SEC $2,1,40 \mathrm{ML}$ StC $1,1,8,0$

Another pormt l'd hike to maxe is that in some tones, for example isfOO, there is a long line of spaces to be ploited. Typing Itis in would be much easief if there ucre a REM starement at the end of the lime tel ing you how mant
paces there were an above average listing and weil worth luping in
witne Oric owners may shl, not know hou to speed up or slow down the Gres's attorepeat. POKE 775,10 wil. make the autorepcat go at its faytest speed, P()KE 775.255 al its seowest Note that if you P()AE this location w th a number snder 10 the tompster uill crash PokEing lhis location also affects the speed of the computer

Thomes Jentreqwer Slough
Soliware winner

## Chactp <br> - $14+3$

## $\because 271$

Id like 10 congratalate Sastertormic and Allanas for there getedeamer al ond〔199 | hase fl pockel manes a week, and I save part of il wa luat every thre weeks I can bu game
(an anyone tell me how to pet past the tubes on Voodor (asite for the Yi(? The) keep browng

Finalls, does anvone know if theres a soceer prozram for the tic $20^{7}$ Matitrew Davenport, Basford

##  네

am wriung out of desperation. Can anyone help me with the Golden Bators?

Has anyone bealen my bigh score of 45,000 on Fred by Quicksilsa or 46,000 on the Snowman. where I finushed all Itevels? Breaden Gorman, Down patick, Co. Down

## Plucy Is che problom

1'm wriling io lell yous what a b.g problem softhare procs is As far as lan see orls one compant has deteated prracy, and thal's But ble Bus.

All comparer oumers have pirate coples of games. In fact one of my school friends has over 50 parales. I tho have about five copies

I thank the only way to siop this probiem is by mating it legal This will take all the sha. lenge out of praty Remember when Cb radis was ulegal" Evers. body wanted to fom in thert, bal now II's lepa mobody's interested any more.

目y the way, any Commedore 64 owners who want good games - try Jamman and stoper Pine. line bs Tanksti Thes rtaliy Lse the Commodore s capa bala es to the full
Tons Murphy, London NH 10

## nope :

['m yel anothe proud JI99 4A owner and I d loke lo recommend two adventure games to every Tt owner Thet 're Adtentiretnama and Is follow-up Maıa, a yreal tiatme ulth good graphls Both are from Inis que
Hy the uas my hoph veore on VEans Mman is 57480 and कny heghent percentaxe on Adveillitemanie is 63
Stephen Wuodhouse, Huddiersineld

## 

Tet selved the Hobbit on The Commodore 64 and if ansbody is stuck send me a sae and I li be giad to heip
Paltick Veshiat, 42 Belmont Rd. Courihouse Green. Coventry CVE $\$ \mathrm{LF}$


When experimenting wilh sound on my TI-99 4A 1 found that using thus sound sratement gives good results.

CAIL 5 OUND $\{4250,110$. $0,111,0,112,0$ )

Nigh Beeden, Cotgrave, Notts

## -L hase <br> Hiccoughs

The Sinclair merodrives. designed for use with the Spectrum have now been on the market for almost a year W.ilh lise lasnch of the QL wih ts rbinl maro. drives, there has been some debate as to whether they are speedy, sturdy and relable cnough for use with a miditine intended for smat business dse
I have been using my QL extensively shece il arrived recently and fird the Psion busmess software rackales extrentely good in that lhey are desmed for immediate use, yet have more complex and powerlal Peatsres which will lake time to masfer
Qullt, an which 1 am wr ling thes, hats 10 make frequent access to the merodites which soows ilings up somenhat Wathin hours of the machme's arrival one of the blank cartridges (eight are supplied free wilh the compuler) developed a fault and I had 10 rectarn 11 for replacement The carlridge in question simp y gave a hiccough and popped ont of the computer $\boldsymbol{u}^{\text {tith }} \mathfrak{a}$, कop of lape v sible enlwined around the drive shali of the mucrodrses 1 carefilly removed it making gire nol to damage the tape, and managed to retura the lape to its ease but it then proved impossibie to retarmal il As wath dises, all cartridyes must be formatied betore they are ready for tuse

Sinclas Research was most prompt in sending a repasement and overall iny opiston of the mexthine at that it is most impressive

Ann Close, Sutton, Surrey

[^1]
## Space 5huttle by Simon Eyre

In a distant galaxy scientists experimenting on a planet's surface are taken captive by a super race that has the resemblance of a lovable pacman ghost.

Every day one sctentist is allowed to watk in the planet's many tunaels to collect food.
$W$ hile the scientist is in the tunnel your space shutte can try to land and pick him up. You must then return to the mothershlp. Your task is made harder by rocks that hover above the planet blocking an mmedrate path to the landing bay.
Your controls are: 2 Left C Right FI Eject 57 Thrust
Thrust can shatter the rocks away from you only when you travel downwards. You only have enough fuel to thrust five tumes.

## Variabies

s. score

II lives
FU fuel
RES maving rocks
Sins spices beturd rocks
Ma locarion of scientust Mo locaton of mothershup Ra location of landing bay Sh location of shurite I,T general toop varnabtes

How it works
2-30 sel variables
40-340 see sereen
140-220 move molhershap
$230-295$ descend shurte
y10-370 thrust on
4100-495 crash and lose a lafe $500-695$ Jantung routhe
$700-774$ retum shutte to mother--
R00-950 success ful seccue routine HHNO 1070 death routine 21000-2010 move two rows to rocks
10000-10070 define user defined graptucs
IS000 DATA tor user defined grephics Soar int
annd sort
out the
cities



Listing 1-Space Shuttic

```
1 BOSUB100D0
z POKE53272,29 POKE53280,0:POKE53281,0.PRINT"3al";
5 SC=|:LI=3:FU=5:RD=54277'WF=54276:HF=54273:LF=54272:V=54296:SR=54278
7RC$="
10 MA=1940.MD=1064 SH=1105:BP=1864
20 FRINT".2SELECT SKILL 1 UPWARDS ";:INPUTSK:IFSK<1THENGOTO20
30 PRINT""%", CL=54272
40%GRI=1864TO1903.POKEI, 60.POKEI+CL,9:NEXT
50 FORI=1944T02023:POKEI,62: POKEI+CL,9:NEXT
G0 FORI=1 TDS+SK:ZX=INT(RND(1)*680)+1144
70 POKEZX,58:POKEZX+CL,INT(RND(1)*8)+1:NEXT
80 FOKEMR,46: POKEMD, 35:POKEMO+1,37:POKEMO+2,38:POKEMO+CL, 8:POKEMAT+CL, 12
90 POKEMO+1+CL,5·POKEMO+2+CL,8.POKESH.39 POKESH+CL,12.BA=1864
1010 K=1NT(RMD<1)*20)+1:BA=BA+K
119 FOKEBA, 43:POKEBA+1,44. POKEBA +2,45 POKEBA+40,59:POKEBF+41,59
120 FOKEBA+42,59 POKEBA+CL,2 POKEBA +LL +1,2 POKEBA +2+CL, 2
136 FOKEBA+40+CL,7:POKEBA+41+CL,11:POKEBA+42+CL,3
1.32 FORT=1T03
```



```
13E NEXTT:PRINT"EW";
149 FRINT"*SCORE-",SC,"MAMHLIVES-",LI,"BMMFUEL-",FU
150 FOKEV, 15'PDKERD,O:POKEWF,O:POKEHF,100
    160 FOKEAD,13.POKESR,O POKEWF,120 POKEHF,5.POKELF,255
    179 FOKEWF,17:POKELF, 100. FOKEMO,32
    180 IFPEEK(197)< 34THEN190
    185 50T0239
    1901 MO=MO+1:SH=SH+1:IFMO+2=1193THENPOKEMO,32:POKEMO+1,32:SH=1105:MO=1054
```


## 4 PROGRAMS

## space．．． Capital city ouiz by ceorge sykes

Revisung for geography exams？ My program randomly asks questions about capulal citics and is easily changeable for other subjects．

## How It work

1－150 Hedras and tule sereen 200－3．30 reads data and displays quation
500－350 if answer correce flash screed and plas tuate 600－650 if answer incortect display answer
L000－1210 DATA
zanto 2060 subrouthat for＂fal＂： sound
3000－30\％3 subrouthe for＂cor rect＂sound

AS，BS Vuestabler and answer stitings
L．lengli of answer strings
$\$$ stbrracts I．from 40 divides by 2 to place Os and As in centre of screen
$X$ RND integer for date reading RS phayer＇s imput from prompr $z$ number of guesses
F start of count to flash screen Th used in sound routine for steppsins notes

By altering the DATA，it could be changed to，say，音 history quiv（monarchs，prime mmisters）or chemital symbols and so on．

And if you change lines 230－300．It can be made into a multiple chore quiz where only one of the alternaluves is correct．

You could even make is more frustrating by not displaying the correct answer！

All the DATA lines have

betn checked against the 1984 edirzon of Coltins＇Atlas of the World．

## Hints on conversion <br> The onls POkEs are

 532＊BORDER colour 532 II SCREEN colous54272 slart of sound slyp
The soand rounac could be
 could the Jashing screen flines 400.5101

The dinala san be shortened thets $3,210,230$ are altered to produce different values）

195 PGKEEH－1，32
 210 POKEMO＋1＋CL，5 POKEMO＋2＋CL， 8
229 POKESH， 39 POKESH＋CL， 12 IFPEEK（197）＜ 24 THEN150
$250 T=1 \mathrm{E} G-(S K+1)$ POKEMO， 36 POKEMO $+1,37$ POKEMO $+2,38$
231 GUSUE2000
235 FUKEMOT＋LL， 8 POKEMO＋CL $+1,9$ POKEMO $+C L+2,8$
240 FORI＝1TOT NEXT GOSUB20日D
$259 \quad \mathrm{SH}=\mathrm{SH}+40$ PDKESH $-40,32$
25И IFPEEK（157）＝12THENSH＝5H－1 FOKESH＋1．32 今OTO290
270 IFFEEK（197）$=29 T H E N S H=5 H+1$ FOKESH $-1,32$ GOTO290
289 IFPEEK（197）$=3$ THENGOTO309
296 IFPEEK（SH） 332 THENSOT 1380
295 POKESH，39•POKESH＋CL，13：GOTO240
299 REMTHFUST 【N＊
3 OUG FOESH， $3=$ PÖK ESH＋LL， 3
3 Й IFFU二以THERGOTO230
$310 \mathrm{IFPEEK}(S H+24)=E 4 T H E H G O T O 233$
315 IFPEEK（SH＋8
32G FOKESH＋45，40．PDKESH＋4D＋CL，2
330 FOKEAD， 19 PO POKESK， 2 POKEHF，17．POKELF， 37
340 FOKEWF， 129 FORI＝OTO155TEP．5．FOKEV，I
359 FDFT $=1$ TO5 NEXTT，I FOKEWF，$D$ PDKESR， 9 POKEAD，O－POKEHF，O：PDKELF，©

370 FUKESH 40,32 ： 1010230
379 REM䉿CHECK MOVEMENT＊
380 CR＝PEEK（SH）
$391 F C R=44$ THENGOT0500
395 IFCRくつ32THEMGOT04E10
399 EEV秤CRASH＊
409 FOKEHD， 190 POKESR，1•POKEHF，106．FOKELF， 120
410 FOKEWF， 129 FORT＝15TOصSTEP－3．FOKEW，
420 POKESH， 41 ：POKESH＋CL，INT（RND（1）＊ 9$)+1$
430 FORR＝1TOS旬•NEXTR：FOKESH， 42 ：POKESH＋CL， 1
440 FORR＝1TOSD．NEXTR，T．POKEWF，O FOKERD，D
45 POKELF，0．POKEHF，0．POKESR， 0
$460 \mathrm{LI}=\mathrm{LI}-1: 1 F L I=0 T H E N G O T O 1$ O．

480 FOKESH， 61 POKESH＋CL， 4 POKESH＋40， 46 POKESH＋40＋CL， 1
490 IFPEEK（SH＋8日） $332 \mathrm{THENSH}=\mathrm{MO}+41: \mathrm{GOTO} 30$



510 FIKKEAD，190：POKESR，1：POKEHF，17．POKELF，37
520 FOKKENF， 33 FOFI＝15TO05TEF－3 POKEV，I POKEHF，I＋ 19 POKELF， 10
$550 \mathrm{FDRT}=1 \mathrm{TO} 0$ NEXTT，I POKESR， 9 FOKEFD， 6 FOKEWF， 0 J $J=46$
5GG NEXT＇T FOFHA＝MATOBF＋44STEF－1 J＝J $+1 \quad$ IFJ＞47JHENJ $=46$
57G FOKEMR，J FOKEMR＋CL，1．FOKEMA＋1，32 POKEMA＋2，35 FOKEMA＋2＋CL， 5



619 PUKEWF，21：PGKESR，128：POKEHF＋14，9：POKELF＋14，9
6zG FGR
530 FUKELF，XI－I $\mathrm{H} T(x, 256$ ） 255
E40 FORP＝1TO1G NEXTP，\％POKEHF＋14，目 FOKELF＋14，E
ESG POKEN， 9 POKESR，E PGKEWF，O POKEAD，G FOKESH， 39 POKESH＋CL， 14
569 FORN $=\mathrm{BH}+46$ TO1943 FOKEMN， 35 FOKEMN $+\mathrm{CL}, 2$ POKE円N－1．32
670 FURT $=1$ T020＇NEXTT，MN．POKE 1943， 32



599 EEMKFETUFH TO SHIF
7019 FOKEV，7．POKEFD， 190
705 FORTㅍTO250＇NEXTT
$710 \mathrm{SH}=\mathrm{SH}-40 \cdot \mathrm{POKESH}+120,32: \mathrm{GOSJB} 2000$

725 1FPEEK（197）＝273D IFFEEK（SH）＝37THENGOTOSGO
749 IFPEEK $(S H)<>32 T H E N 400$
750 FORT＝1T050：NEXTT
760 POKESH， 39 POKESH＋CL， $3 \cdot \mathrm{POKESH}+40,40 \mathrm{POKESH}+40+10 \mathrm{~L}, 8$
770 GOTOT10
799 REM类HOUE察
BG1 POKESH， 32 POKESH＋4日，32．SH＝MO＋41：POKESH， 39 POKESH＋CL， 4
819 FORMOJMOTO1064．3TEF－1 POKEMO，36．POKEMO＋1，37 POKEMD＋2，38
宅き C＝INT（RND（1）当13）＋1－POKEMO＋CL，C POKEMO＋CL＋1，C POKEMD＋CL＋2，C
33 FOKEMO＋3，32：POKEMO＋41，39•POKEPO＋CL＋41，3
G40 POKEMO＋CL＋42，32．POKEV， 15 POKEAD，$\because$ POKEWF，$D$ POKEMF， 106
B5G POKEAD，13．POKESR，D．POKEWF， 129 POKEHF， 5 POKELF， 255
860 POKEWF， 17 POKELF， 100 F $10 \mathrm{RT}=1$ T050 NEXTT，MO


873 FRINT＂ 
874 PRINT＂．BGU FRINT＂MENETHE SUK＂YYOR YOU JUST SAVED WISHES TO＂
E85 FRINT＂MDEXTHANK YOIJ FOR RESCUEING HIM ！BUT ！！！

G10 FRINT＂MD［N1，TOU SANE THEM TOO？DO YOU WISH TO＂
910 PRINT＂MPPDEDKTRY THIS ？ENTER Y GR N＊




```
950 G0T0920
```







```
1ू3贝 PRIMT"METRESORRY FRIEND EUT YOUNE BIT THE DUST"
```



```
1450 FRINT"&TMNDHIOI !! DO YOU WANT TO TRKE PART OF"
```



```
1GTE GETH$:IFF$=M"THEN1070
1080 IFH$="U"THENCLR:G0TO2
18GEIFR真="N"THEFHFRINT""\" - END
1055 万0T01070
195G ENII
```



```
2g@5 SA$=5A$+" ":IFLEM(SF$)=15THENSA$=""
2010 RETUFN
9995 REM*IEFIHE GRAPHICS*
1MDRG FRINT""FLEASE WAIT GRFFPHICS LDADING"
10410 PGKE56334,FEEK(56334)PND254 POKE1,FEEK(1) FNI251
101920}F\mathrm{ FOFL=0TO1624.POKEL+12288,PEEK(L+53248).NEXT
10g30 FOKE1,PEEK(1)OR4:POKESE334,PEEK(56334)OR1
1E14411 FORL=GTO12 FORE=\TO\ REFDN POKE1256%+(8$C)+B,N NEXTE;C
```



```
10960 PRINT"GIRAPHICS REFDY PRESS FINY KET"
10075 POKE198,0 WHIT19%,1:POKE198,0'RETUFN
14999 REM*DATA FOR GRHPHIES*
15G10 DATF28,62,42,107,127,127,109,73
1501G DATH\emptyset,7,9,25,57,127,252,248
15020 IATA24,255,153,153,153,255,0,0
15030 DATAM,224,144,152,156,254,63,31
15040 DAFFG,40,60,102,231,255,60,102
15050 DATA186,186,84,40,16,0,0,0
15060 DATA17,194,24,59,152,2,42,137
15070 IATAG, 5, 24,55,25,24,0,0
1508G DPTA128,192,224,208,200,255,192,255
15090 DATAD,0,0,0,0,255,0,255
1516以 DFTA1,3,7,11,19,255,3,255
15110 DATA56,56,16,56,84,16,40,68
15120 DATA56,136,84,56,16,16,49,68
15130 \ATA24,52,126,237,159,118,28,8
15140 DRTR255,195,189,165,165,189,195,255
15150 IATA32,32,114,250,255,255,255,255
15160 \NTTA, 24,60,126,255,231,66,36
15170 DATA255,255,255,0,0,255,255,255
```



```
15181 REM#########################################
15182 REMJ#########################################
15183 REM胙##########################################
```



```
1GOD1 REM㐘SPRCE SHUTTLE BY'SIMDN EYRE*
16002 REM粕 ADED 14 OF SHEFFIELD *
160日3 REM糸COMPLETED ON MAU 24 84 FOR*
1G004 REM% HDME COMPIJTIMG WEEKLY **
```



Listing 2 －Capital City Quiz

[^2]

```
30 PRINTSFC(11)"m*** E = 园 
```






```
Gg FRINTSPC(11)**RE
10日 FRINTSPC(11)"泡 E**
119 FRINTSFC(11)"##n
        日*
    *)
120 PRINTSPC(11)*"自
    N
130 FORT=1T0550日 NEST
149 FUKE53281,7.POKES3280,6
15G FORT=1TO1GWD NEXTT
20
210 FEFAIF*(K),Bs(K)
220 NEXTK
225 S=INT《RNI(G)*EO)+1 REM RESEEIS RND GENERATOR
```




```
250 FRINTSPC(19,"慁晾昨"
2EB L = = EN(両$0%)?
z70 S=INT(<4W-L)ノ2),FEM CENTRES WUESTIDN DISPLFY
```




```
310 IFR尔=$$(x)THEN40以
3%1F2=3THENGGO
```



```
39% REM米検STHRT FLASHING SCREEN***
4005 F=0
5010 POKES3280,7:PDKE53281,0
```












```
5% IFC"$="世"4THEN225
540 IF[手="N|"THEN EN\D
559 IFL゙$ぐり"N"THENS10
```






```
6E% L=LEN(ES(%),
```






```
1G10 IRTA"SHITZERLAND", "EEFHE", "SLEDEN", "STDLKHOLR", "TURKEN", "FHN HRN"
```



```
1030 DATG"PEFU", "LIMF", "NENWFY", "OSLD", "UNFM", "MUSNG"
```




```
106D IRTR"ARGENTINR", "QUENOUS AIFES", "AUSTRIA", "VIENNA", "EJFMA", "FHNQUON|"
10FG IHATA"IENMARK", "COFENNHFIEN", "C'PRRUS", "NICUSIH"
```




```
1I回 IFTA"LHFISTMMG ISL.","FLYING FISH COUE"
```




## PROGRAMS






113 IIATH"JMMAICH", "KINGSTON", "ISRAEL", "JEPISHEEM", "INDIF', "NE, LEHLI "




2015 5-54272
$\therefore$ W10 FORL $=5 T 15+24$ FUKEL, $日 \cdot$ MEXT




- प50 FOME $5+4,123$








306FFMES+4, 33
30, ${ }^{\circ} \mathrm{FORT}=1$ TGI $\mathrm{MER1}$




## (1)

Andineling

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- The precase greduction formaik can be ser by the ung Thus


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## G PROGRAM

# at my piano <br> ther day．．． 


20 BORDER 7：PAPER 7：INK 0：CL5 ：POKE 23659，日：POKE 23617，236：LET L＝．2：LET P＝0
30 FQR $t=31$ TO 240 STEP 24
40 PLDT $\uparrow, 26 z$ DRAW 0,52
50 NEXT $t$
66 PLOT 32，20：DRAW 191，0：DRAW 0，521 DRAW $-191,0$

90 PRINT AT 13，4；＂＂ OVER B；＂■＂


＂！ 5 PRIN AT 14．4i
OVER OT＂I＂
120 PRINT AT $0, \theta^{\prime \prime}$ MUSICMAKER＂；AT 1,$0 ;$ INK $1 \%{ }^{H}$ R．D．LANGFDRD 1
9日4＂


 LAST NOTE PLAYED $={ }^{*}$ ；NS；＂＂
160 IF INKEY $\boldsymbol{F}^{2}=\mathrm{mm}$ THEN GO TO 160
170 IF INKEY ${ }^{(10}=$＂P＂THEN GO TO 470



：BEEP L，O＋P：LET A＝D：PRINT AT 1B，5；INK 7；PAPER B；BRIGHT E；＂A＂：EO TO 350

＊BEEP L， $2+P$ ：LET A＝2：PRINT AT 18，日；INK 7：PAPER O\％BRIGHT O；＂g＂：GU TO 350
 ＂5 BEEP L， $4+$ P：LET A＝4：PRINT AT 1E，11；INK 7；PAPER D；BRIGHT 0；＂D＂：GO TO 350 2उD IF INKEY＊＝＂F＂THEN LET NSE＂F＂：PRINT AT 1日，14；INK 7；PAPER 1；BRIGHT 1；＂F ＂：BEEP L，S＋P：LET A＝5：PRINT INK 7；PAPER B；BRIGHT 0；AT 1日，14；＂F＂ 3 GO TO 350 240 IF INKEY $=$＂G＂THEN LET NST＂G＂：PRINT AT 1日，17；INK 7；PAPER 1；BRIGHT 1；＂G
 250 IF INKEY $\$ 0^{\circ} \mathrm{H}^{\prime}$ THEN LET N\＄＝＂A＂：PRINT AT 1日，20；INK 7；PAPER 1；BRIGHT 1；＂H ＂：BEEP L， $9+\mathrm{P}$ ：LET $A=9$ ：PRINT AT 19，20；INK 7；PAPER $\mathrm{m}_{\mathrm{F}}$ ；BRIGHT 0 ；＂H＂：GO TO 350
 $": ~ B E E P$ L，11＋P：LET A＝11：PRINT INK 7；PAPER O；BRIGHT F；AT 1B，23；＂J＂：GO TO 35 0
270 IF INKEY象＝＂K＂THEN LET NS＝＂C＂：PRINT AT 18，26；INK 7；PAPER 1；BRIGHT 1；＂K ＂：日EEP L，12＋P：LET A＝12：PRINT AT 1B，26；INK 7；PAPER D；BRIGHT 0；＂K＂ 2 GU TO 35 －
 ＂：日EEP L，1＋P：LET A＝1：PRINT AT 14，i；INK 7；PAPER 日；GRIGHT D；＂W＂：GO TO 350 290 IF INKEY盾＝＂E＂THEN LET NS＝＂D＊＂PRRINT AT 14，9；INK 7；PAPER 1；BRIGHT 1；＂E


## This sophisticated music making program from Richard langford is effortless on your part．Just sit there and let the music flow from your fingertips




NOTE LENETH＝0．3
FITC゙H＝－ 1
 T＂；EEEP L， $6+P$ ：LET A＂6：PRINT AT 14，15；INK 7；PAPER D；BRIGHT 0；＂T＂ 2 GO TO 350 310 IF INKEY $5=" Y$＂THEN LET N\＄＝＂G＂＂：PRINT AT 14；18；INK 7；PAPER 1；BRIGHT 1；＂ Y＂：EEEP L，B＋P：LET A＝日：PRINT AT 14，1日；INK 7；PAPER D；BRIEHT 日；＂Y＂z GO TO 350
 U＂：BEEP L，10＋P：LET A＝102 PRINT AT 14，21；INK 7；PAPER O\％日RIGHT O；＂U＂z GO TO 3 －
330 IF INKEY\＄w＂I＂THEN LET N\＄\＃＂CW＂：PRINT AT 14，27；INK 7；PAPER 1；ERIGHT 1；＂
 －
346 GO TD 390
356 LET B\＄＝STR Ls LET A\＄－A\＄＋B＊
36由 LET B\＄＝STR象（A＋P）\＆IF LEN B\＄＝1 THEN LET B\＄－BS＋＂m

3日B LET A

400 IF INKEY $5 \mathrm{~m}^{4} 6^{\circ}$ AND P＞－50 THEN LET PㅍP－12：日EEP 2,40
410 REM REPLAY

430 IF INKEY\＄＝＂2＂AND L＜．9 THEN LET L＝L＋．1：BEEP ．2，4日

ED
＂：LET As＝As（ TO LEN As－6）\％BEEP ．4，－36：PRINT AT 21，0；${ }^{\circ}$
45G IF INKEY\＄\＃＂X＊THEN GO TD $61 \overbrace{}^{\circ}$
460 GO TO 150
47\％IF AS＂＂＂THEN PRINT AT 21，O；INK 2；＂THERE IS NL TUNE IN MEMORY＂：FOR

＊：GO TO 150
480 CLS：PRINT z PRINT INK 1；＂DO YOU WANT THE TUNE TO PAUSE AFTER EACH NDTE（Y／N）？

500 LET P\＄＝INKEY＊
510 IF P\＆く＞＂Y＂AND P＊く＞＊N＂THEN GO TO 500
520 BEEP 2．40：CLS
530 FOR T＝1 TO LEN A
540 LET Z\＆$=$ A $\$(T$ TO $T+2$ ）
550 LET $X \$=A *(T+3$ TD $T+5$ ）
$\$ 60$ BEEP VAL $Z$ ㅇ，VAL $X$＊
570 PRINT AT 21，D；＂LENTH＝＂；Z5；＂NOTE＝＂；X\＄；＂＂
586 1F P\＄푸＂THEN PAUSE ©
590 NEXT T
600 CLS ： 60 TO 30



629 GO TO 150


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Instructions are included in the program.

## How it work <br> 100-140 untialize game

$150-410$ draw screen
$420-610$ man game loop. Move car, check for crash 620.790 end game rousines HOU-800 difficulty level selection 900 -1090 redeline charcters
1140-1360 instructions

## Variables

W. E pusition of car
st score
HI hl score
7.4. $\mathbf{B}, \mathrm{A}_{1}$, Jrulw suteer

Trit. ASC code of charbcter at HE
T,d eotnenon delays
AS inputs
Dist diff cuity level
C 1 , C HOHG charaley rederint
CHAR read DAIA to be POKE.d Imo new charatier set

Hints an sonverkton GRAPHICS 0 see screen to 40 $\times 24$
POKE 752.1 turn cursar off POKE 752,0 tump cursor on POKE 756, A/256 enable characlers
POKE 710,192 green screen
POKE 82,0 set left margin to 0 CHRS(32) ASC code for SPACE POATION position curtor it ROW, COLUMN
PLEK( 764 ) last key pressed goUnd CHANNEL, NOTE DISTORTION, VOICE
UOCATE telurn ASC code for charecter as ROW,COLUMN in last yariable
Replace lines 1020-1212 with your micro's awn character redelinutron rouline


```
110 REM
```



```
190 REM
200 REM **BY LAWRENCE STAVELEY**
210 GRAPHICS D:POKE 752,1:% "%INITIALIZING":?
"PLEASE WAIT A FEW SECONDS"
220 GOSUB 1020
230 W=3:E=3
240 DIM A$(1)
250 SC=0:GOSUB }92
260 REM DRAW PLAYFIELD
270 POKE 752,1
280 POKE B2,0
290 ? :?
300 POKE 710,192
310 FOR }x=1\mathrm{ T0 E80
320 ? "%"*
330 RESTORE 420
340 NEXT X
350 FOR S=1 TO 140
360 READ A,B
370 POKE 752,1
38品 POGITION A,B=? CHR*(32)
390 NEXT S
400 POSITION 0.9:? "FINISH":REM FINISH IN INVERSE
410 POSITION D,2*? "START":REM START IN INVEFSE
4,30 DATA 2,3,2,4,2,5,3,3,3,4,3,5,3,6,4,6,5,6,6,6,7,6
43,0 DATA 7,5,7,4,8,4,7,4,10,4,11,4,12,4,13,4,14,4,
15,4,15,5,15,6,15,7,15,8,15,9,16,9,1,7,9,18,9,19,9,
20,9,20,8 440 DATA 20,7,20,6,20,5
450 DATA 20,4,21,4,22,4,23,4,24,4,25,4,26,4,27,4,29,
4,29,4,30,4,36,5,30,6,31,6,32,6,33,6,33,7,33,9,54, 8,
35,8
460 DATA 36,日,36,9,37,9,37,10,38,10,38,11, र.8,12, 58,
13,37,13,37,14,36,14,36,15,35,15,34,15,33,15,32,15,
```


## 31，15

470 DATA $30,15,30,16,29,16,29,17,28,17,28,18,27,18,26,1$ B，25，18，24，18，23，18，22，18，21，18，20，18，19，18，18，18，17，1日 480 DATA $16,18,15,18,14,18,13,18,12,18,11,18,10,18,9,18$ $, 8,1 日, 7,18,6,18,5,18,4,18,3,18,3,17,3,16,3,15,4,15,5,15$ 490 DATA $6,15,7,15,7,16,8,16,9,16,10,16,11,16,12,16,13$ ， $16,13,15,13,14,13,13,13,12,13,11,12,11,11,11,10,11,9,11$ 500 DATA $8,11,7,11,6,11,5,11,5,12,5,13,4,13,3,13,3,12,3$ $, 11,3,10,2,10,3,9,2,9,3,8,2,8$ 510 POSITION O，D：？＂RALLY BY L．STAVELE $y$＂：：REM SPACES AND LETTERS IN INVERSE 520 POSITION 0，22：？＂
＂；：REM 40 INVERSE SPACES
530 REM MAIN GAME LDOP
540 POSITION W，E：？＂＂
550 IF PEEK（764）＝6 THEN E＝E－1
560 IF PEEK（764）$=38$ THEN E＝E 1
570 IF PEEK（764）$=23$ THEN $\mathbf{W}=\mathbf{W}-1$
S80 IF PEEK $(764)=22$ THEN $W=W+1$
590 IF PEEK $(764)=255$ THEN SOUND $0,144,4,5$
600 IF PEEK（764）＜＞255 THEN SOUND $0,200,6,5$
610 IF PEEK（764）＜＞ 255 THEN SC＝SC＋ 1
620 IF PEEK（764）＜$>255$ THEN SC＝SC＋1
630 IF SCJHI THEN HI＝SC
640 POSITION 4，22：？＂SCORE：＂；SC；
650 POSITION 24，22：？＂HI－SCORE：＂；HI；
G60 LDCATE W，E，TREE
670 IF TREE＝ASC（＂\％＂）THEN 740
GBO REM ALL LETTERS INSIDE＂＂INVERSED
690 IF TREE＝ASC（＂F＂）DR TREE＝ASC（＂I＂）DR TREE＝ASC（＂N＂）
DR TREE＝ASC（＂S＂）DR TREE＝ASC（＂$H$＂）THEN 日20
700 IF TREE＝ASC（＂S＂）OR TREE＝ASC（＂T＂）OR TREE＝ASC（＂A＂）
OR TREE＝ASC（＂R＂）OR TREE＝ASC（＂T＂）THEN 740

720 FOR T＝0 TO DIFF＊S：NEXT T
730 GOTO 530
740 FOR T＝TO 255：SOUND $0, T, 10,10: N E X T$ T：SOUND $0,0,0,0$
750 ？＂3GAME DVER＂
760 ？＂ANOTHER GAME Y／N＂
770 POKE 764，255
780 INPUT A
790 IF A\＄＝＂Y＂THEN W＝3：E＝3：GOTO 250

```
BDO IF A$="N" THEN GRAPHICS 0:POKE E2,2:END
B10 IF A疌〈>"N" THEN 740
B20 7 "3CONGRATLLATIONS"
BSQ FOR T=0 TO 255:SUUND 9,T,10,10:NEXT T:FOR T=255 TO
\square STEP -1:SOUND 0,T,10,10:NEXT T:FOR T=0 TO 255:SOUND Q
,T,10,10:NEXT T
840 SOLND 0,0,0,0
850 ? "YOU FINISHED THE RALLY"
860 ? "ANDTHER GAME Y/N"
970 POKE 764,255
BED INPUT AS
890 IF A$="Y" THEN W=3:E=3:GOT0 250
900 IF A$="N" THEN GRAPHICS OPOKE 82,2:mm
910 IF A車》"N" THEN B20
920 FRINT "}":SETCOLOR 2,0,0:GOSUB 1220:? "INFUF DIFFIC
ULTYY LEVEL (1-5) *
9.30 ? ? "1...............HARDEST"
940 ? :? "2..............HARD"
95\ ? ? "ड.............MDDERATE"
960 ? ? "4...........FAIRLYY EASY"
970":7 "5...........EASY"
990 ?
990 INPUY DIFF
1000 IF DIFF<1 OR DIFF>5 THEN 920
1010 POKE 82,0: POKE 764,255:RETURN
1020 REM REDIFINE CHARACTERS
1030 CH= (PEEK (106)-B) %256
1040 CHDRG=(PEEK(756)*256)
1050 FOR I=0 TO 511
1060 PDKE CH+I,PEEK (CHDRG+I)
1070 NEXT I
1080 RESTORE 1130
1090 FOR J=0 TO 7
1100 READ CHAR
1110 POKE CH+(ASC("**)-32)*g+J, CHAR
1120 NEXT J
1130 DATA 24,24,24,255,255,24,24,24
1140 RESTORE $190
1150 FOR J=0 TO 7
1160 READ CHAR
1170 POKE CH+(ASC("%")-32)*B+J,CHAR
1180 NEXT J
1190 DATA 0,24,60,126,126,24,24,0
1200 POKE 756,CH/256
1210 RETURN
1220 POKE 752,1:POKE 82,暗? s? m R A L L
Y
1230 ? EY LAWRENCE STAVELEY"
1240 ? " FEBURAFY 1964N
1250 ?
1260 ? IN THIS GAME YDU ARE A DRIVER DF A CAR"
1270 ? "(%) AND HAVE TO STEER YOUR WAY "&REM & IN INVER
SE
12BO ? "ARDUND THE COURSE AVDIDING THE TREES (%)"
1290 ?
1300 ? "HEFE ARE YOUR KEYS:-"
1310 ?
1320 ? "SPACE.......BRAKE"
1330 ?
```



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# Wordgram 32K Bet EJ.95 

Daca software, 59 Mackenzie Rd, Moseley, Brmunghan BlI SEP

The stated anm of thas program as to teach the pringpal parts of speech in a practical way.

In fact, it it a story wriung program in which you form your story from the various word types offered and afeer choosing Biype of word, e.g, werb, you are offered alternative verbs from which to select the one for your story.
It covers the foltowing parts of apeech; nouns, adjectaves. pronoubs, prepositions, verbs, adverbs and conjunctions, It also has two levels of difficulty which change the category titles of the words offered.

The idea is that you start with verbs burig described is action words before you use the correet tithe in level 2. The program is based on a good sound idea and y more hikely $t 0$ faster a good understanding of the structure of English than say the old grammars with which you may be more famuliar. The stories yow creare are not, however, checked tn anty real way and if you insist you can write complete nonsense (no this review was nol writen with the program!). Despute thus, chuidren will find the idea interesung to say the least. D.C.
instructions case of use
$85 \mathrm{~m}_{5}$
graphres 80\% value for money

## Chemsicel <br> simulations 326 ERE E13.80

Acornsoft, 4 a Market Hill, Cambridge CBN 3 NJ

Three A-Level chemistry programs designed to be used in the same wsy as the company's Chemical Analysis, The First program, IR, denls weth infrared speciroscopy which I found was ret in my A-Level sylinbus. and was dsficule to understand and Pollow.
The bookles, uyuatly very good, was sparse. However, to be fais if did look impressive. A graph of ${ }^{\text {sen }}$ spectrum of estmple organle compound is shown You then have to guess the number of various atoms which consturued one malecule.
PH curves may be drawn and, by using dofferent limits, obtain varying degrees of accuracy. A thort test is followed by onte on the mathematics of itiration curves where you mbust cortecs errots in given statements. A calculation of the PH of solutions employing a grod press to reveal lane by line system foliows. A very good prograr that I would highly sate

Organal displays a list of 1 E organis compounds covering a range of functional groups There is a lisi of questions that may be asked by the student. A good progratr.

ease of use display $85 \%$
$80 \%$

## Readright 52K Rec 19.95

Daco Sofiware, 59 Mackenयe Rd, Moseley, Brrmungham BII AEP

Lnhke many educational offerings we see nowadnys, this prokage provides real and extended range of options which can be used for children enther as they develop skulls or it pante of attanment levels.
The program is for the childten at the earty and antermediate stages of learning 10 read and 15 meart to help in two mann areas. It encourages the use of contextual cules while reading by always offering a word to be fitted into postion an a sentence already on sereen, this is a very good and helpfal method to adopt. It also encourages

## Proc Atbeck उ2K B8E E5.7S

Shards, 189 Eton Rd, llford, Essex IGJ 20 Q

There is no doubs that if you want value for money in yous software Shards" Fun to Learn senes tres very hard to give 1 . Thus is the thard I have seen now and they seem to get even betier each tume.
The subject of thus package is fractions bul it doen'i comprise puss one game with a number of levels - there are six games, all very differeal. Despite this, they are alt contaned withn one master prograns so there is no extra tandras lume
The games are: shady Fracthens, Frac-Altack, More or

Less, Beam up, Strong Arm and Hungry Radish. They cover, wed and intereacugly, the areas of fraction kdentification and the changing of denominators but don't deal with addition or subtraction of fractions.
This is perfectly reasonable and the amusumg graphics and sound will really motivate the nine-15 year olds's the prograth is meant for, Whalst this proyram wonnt teach the concepts it will cerlanly motavase chaldren to get pienty of practise.
D.C.

| Instructions | $99 \% \%$ |
| :--- | ---: |
| ease of use | $90 \%$ |
| graphics | $90 \%$ |
| value for money | $100 \%$ |

- $100 \%$


## thth thes

## Mathskills 32K BEC E11.95

Griffin, Ealung Rd, Alperton, Wembley, Middx HAO 1HJ

This packuge is almed at the 10-10 15-yeas-old who is preparing for the o-Levet or CSE mathematiss examination It is a teachins package which, it is claimed, will help you to learn mathematics. This I don't feel to be fully true.
What a package such ois thas will do is give you practice and deveiop skith in answering the lype of questions included by the method proposed Thas is not the samer as learning muthemarics and can only be described as a part of the whole. The packuge covers long mulisplication, long dyvison, highes common factor, lowest common multiple and fractorn manipulation.
The approach is fars, with a worked example being followed by questions for you to answer, In some cases there il a help faciaty, in others there is a step-by-step checking of answers, so that you are unilkely to gee the wreng method fixed in your mind. Having sald all this, the programs are no more interesing than heving a self-correcing tent book. While this may be helpfut to some. it doer nothing to altrach the slow or reluctan! fearner
instructions. $\quad 75 \%$
ease of use
$70 \%$
graplacis
N/A
value for mioncy
phontes, 㩆 the program will spall up the words into theit constitsent phontmes for your child to staund out.

It needs to be emphasised however that thas wall only be of help to yeur chald if this matches the method used in tis school and shoutd not be used without consulabison.
The best feature is the placement progrant, of test, whel should be used before wans the others and will udvise you on which of the seven main programs to use and even which of the levels to try. A bitele visual etcouragement would have been nice though. D.C.
$90^{80}$

graphacs
N/A



## U.S. SCENE

## \&earming isoom for softwerre

Here's a software marketing riddle Last year there wasn't one, and this yedr it is signdficamt Alny guesses? I'm talking abour the educorional software marke! (of course')

Most computer retaifers constder that educanomal programs now acrount for up to 30 per cent of toral soles. As the start of last year, the total educathonal soff ware market was esimmated to be around two per cent. Not bad for the year's growih

The reasons for thes rapid growth are the pronounced increase in the number of computers now in U $S$. homes and schools, nafonal advertisin? schemes used bv some hardware manufacturers which feature chadren learning with compuser assistance and the better selection of qualut progroms The marker shat educalionat software companies were onty ralhing about iwo vears ago as rapudy turning into o sugneficant porsion of the tatal market

Some of the leading makers of educational software include Spinnaker and HES. A coupie of reasons whs the products of those companies sell so well is that, uside from besng well packaged and useful, the progroms are fun to use and low in proce Parents don't appear so want to buy programs which aren't ftoh att are unwillige to spend \$soland up for soft ware to run on a computer that mat hove cost less thon $\$ 100$

One larke sap that stlll nematns as for programs made for chutren in high school (ages (3 17) Most of the programs avatiable are based on somie sort of drm theme, mosth sutted to chuldren in the promary Rrades Although there are a few progroms designed for use by those preparting for the Sk holasitic Aponude 7 est (SAH), a college entrance exam, mast parents, thoush, are unwalling to spend 880 on thes progrom that may oniv be used once or swice According to many market analists, growing consumer interesi, school disifict interest, and new programming techniques all tink to lead to the expectation of strung growth in the educational market in the near future.

## 240 1

Uf your can't wost to Jump an the microhoppy bandwaron, Amadek has the answer for vou. The AMDC-I and II are three. meh druve systems that whll work to prowde 180 A (I) or $360 \mathrm{k}(I)$ of formatted storaze capabhir Interfacing is a breeze as boris mucofloppy arwes have buth-in intellizent controtiers a hich are fulls compathble with the stars line, using the DOS $\triangle X L$ operathy system Sirgkested retal prices. syos for the AMDC I and 5850 for the $A M D C-I I$ You should be able to pet detaris on these unis from your local (Arart or Amaek) deater

## kek $k$

A new word processor, infroduced by Prentice-Hall, called SkiWhiter // also conrans a communticatons propram and us being touted as a verv powerful tow cosi package The program comes pack aged in a ROM carridge designed to be plugged into such machines as the Commodore 64. PCyr, and Atart comptrers. The utht tuses a 16 K ROM and is very easy to use, fast, and versatile In addion so the usual word processing Jeatures, " offers a Capture funchon which turns the computer imio a "smart" terminal capable of downloading information being sens by another computer and to store that information on either cassette or disc or even pur it dinectly moo a documens beint edited by the ward processar

Becalse of this sype of communtations option, thes program could set a new standard in what can and should be expected from low cost programs. Ken Skier, author of the program and prestdent of Skisoft th Lextngton, Massachussets, apparently has had quite a lot of experiente in squeezing a los of code into a small space th order to run on smatler computers. For example,
the original ward processor on which Sk:Wrtter HI is based, was designed to be housed in oniy of inside a ROM chip in the Epson HX-20 lapsize comptuer
$5 k$ ker also hus experience working for Wong, maker of dedicated word processors. Expect SksWriter to become avaulable later in the vear, probubly around Octaber or so. For 50995 , If should be well worth the watt

## yutymix

Axonux, of Sals Lake Cuy, Utah, has msroduced us model ThinPrins 80 printer, a high performance full page printer which uses thermal prinitng rechniques and runs on rechargauble batterjes. It weskhs abour four pounds and is quate compact in size, being able to fil conforiably inside less than half of on averaze size briefcase.

Features inctude 40 characters per second, budirectional prining capabilty, a 2 A buffer, 80 or 136 characters per line, seral or parallel interfacimp, and will accept etther smgie sheet feed or contmuous roll feed The firm clams that the graphess resolution of the ThinPrint 80 as the highest offered by a batlery operated um. It will produce resolution of 960 by 7 dots per lune which can be used to produce graphs, charts, and prctures of facsimile-like qualty, All thrs for a mere $\$ 279$ This price inctudes a set of rechargeable battertes, an A.C. (mams) odapter, and an 80 page roll of paper

## Trublint

Even software manufaciures which have made their mputatons for high quality sames have also been gettme their feet wet in the "serious" marketplace A good exomple of this is Broderbund. whose Bank Sireet Writer is doung very wetl andeed II as dessened to be a low rast easy to use home machne ortented word processor Another goond example is the Swhapse company, also a top sames pubisher. It has just recently come ouf with a proscumme calted Refax, which ts designed to help users fower their stress level and be able to learn how to take at exsier And when vou tive here iff Califorma, nothing is more serious than that!

## Fhixtare

Scrence-fiction buff that I am, th was mpossibte to pass by the notice that the well known pubtisting firm of Simon and Situster ts planning to distribute a hne of sci-fi computer games Not only that, but these kames have been written bs well known sci-fi aulhors such as Robert Hemiein, Fred Saberhagen. Jerry Pournelle, Larrv Niven, and Siephen $R$ Donaldson to name but a few Among the various mifes to be distributed, look for 1 ings Our of Shadow, bv Saberhagen, Snake!, by John Chenauft, and Starclash II, by Stephen Uation. These should be out saon.

Coming Jater in the year will be Anmal Love, by Donaldsor, The Game of Empres, by Poul Anderson, Glorv Road, bv Hemien, and Inferna, by Niven and Pournelle The game series will retasl from $\$ 2495$ to $\$ 34.95$ and will rum on Apple, IBM. and Alars computers I don's know about all of shem, buf I can fell you that Jerrv Pournelle is quite a good programmer in addrion to his other stills, and that he has pur quire a lot of effort into inferno. These should be quite an excellent senes of games.

Time so go ame. Till sext week...
Bud Izen, Farfield, Californis

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